WHAT IS CLAIMED IS:

1. A method for determining the rotational position of a drive shaft of a commutated direct current (DC) motor as a function of the number of current ripples contained in an armature current signal of the motor as the motor drives the drive shaft, the method comprising:

digitally sampling at sampling time points the armature current signal of the motor as the motor drives a drive shaft;

generating a digitally sampled armature current signal value at each sampling time point;

storing each digitally sampled armature current signal value in memory as the digitally sampled armature current signal values are generated;

comparing the magnitude of the digitally sampled armature current signal value corresponding to a current sampling time point and the magnitudes of selected ones of the digitally sampled armature current signal values corresponding to previous sampling time points in a time interval containing the current and previous sampling time points;

generating a rising slope detection signal if the comparison is indicative of an increasing tendency in the magnitudes of the digitally sampled armature current signal values over the time interval, the rising slope detection signal being indicative of a rising current ripple slope; and

generating a falling slope detection signal if the comparison is indicative of a decreasing tendency in the magnitudes of the digitally sampled armature current signal values over the time interval, the falling slope detection signal being indicative of a falling current ripple slope.

2. The method of claim 1 wherein:

a rising slope detection signal is generated if the magnitudes of the compared digitally sampled armature current signal values monotonically increase over the time interval; and

a falling slope detection signal is generated if the magnitudes of the compared digitally sampled armature current signal values monotonically decrease over the time interval.

3. The method of claim 1 wherein:

the step of comparing includes conducting a second usability test of the magnitudes of the compared digitally sampled armature current signal values if the compared magnitudes have a non-monotonic tendency.

4. The method of claim 3 wherein:

conducting the second usability test includes disregarding at least one of the digitally sampled armature current signal values corresponding to the previous sampling time points from the comparison.

5. The method of claim 3 wherein:

conducting the second usability test includes statistically evaluating the digitally sampled armature current signal values at the current and previous sampling time points to determine whether the magnitudes of adjacently sampled armature current signal values have either an increasing or decreasing tendency, and determining whether the compared digitally sampled armature current signal values have an overall non-uniform monotonic tendency based on the frequency of determined increasing and decreasing tendencies.

6. The method of claim 1 further comprising:

examining each preceding generated slope detection signal within a given time period to determine its tendency; and

determining whether there is an overall rising or falling tendency within the given time period based on the frequency of the tendencies determined from the examination.

7. The method of claim 1 further comprising:

varying the time interval as a function of the operating state of the motor.

8. The method of claim 1 further comprising:

subjecting a generated slope detection signal to a plausibility check.

9. The method of claim 1 further comprising:

generating a current ripple signal if rising and falling slope detection signals are generated one after the other in a given time period.

10. The method of claim 9 further comprising:

counting the generated current ripple signals; and

determining the rotational position of the drive shaft based on the counted amount of current ripple signals.

11. The method of claim 9 further comprising:

generating a double current ripple signal if a second pair of rising and falling slope detection signals are generated one after the other in the given time period, the double current ripple signal being indicative of a double current ripple.

12. The method of claim 11 further comprising:

counting the generated current ripple signals and counting the generated double current ripple signals;

subtracting the count of double current ripple signals from the count of current ripple signals to determine a corrected current ripple signal count; and

determining the rotational position of the drive shaft based on the corrected current ripple signal count.